

## Patent Claims

1. Brush sealing ring for use as a sealing element  
5 between components which can move relative to one  
another, in particular between a rotor and a stator  
as an element which is fixed to the stator, having  
an annular housing and having a multiplicity of  
10 aramid fibre-based bristles which are attached  
within the housing and protrude radially or axially  
out of the contour of the housing and whose free end  
faces form tangents with an imaginary, rotationally  
symmetrical or planar face, characterized by a  
combination of the following features:
- 15 A) the bristles are composed of sections (5, 6) of  
strands and/or threads of aramid fibres which  
are present in a wound arrangement,  
B) each section (5, 6) runs in a loop shape around  
a core (11) extending away from it without  
20 crossing over in such a way that its two end  
faces (7, 9; 8, 10) form tangents with the  
same imaginary face (F) which is spaced apart  
from the core (11), and  
C) the sections (5, 6) are arranged around the  
25 core (11) in a plurality of layers one on top  
of the other and are secured in a frictionally  
locking fashion with a clamping section (12).
2. Brush sealing ring according to Claim 1,  
30 characterized in that the core (11) is shaped from  
a metal wire with a round cross section and the  
clamping section (12) is shaped from a metallic  
round tube which is slotted in the longitudinal  
direction.
- 35 3. Brush sealing ring according to Claim 1 or 2,

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characterized in that, in addition to their, essentially, radial or axial orientation, the sections (5, 6) have a directional component in the circumferential direction outside the clamping region (12).

4. Brush sealing ring according to one or more of Claims 1 to 3, characterized in that the section (5, 6) have end faces (7, 9; 8, 10) which are manufactured by mechanical cutting or shearing off, by laser beam cutting, if appropriate with water cooling ("laser microjet process"), or by means of water jet cutting.

5. Brush sealing ring according to one or more of Claims 1 to 4, characterized in that the aramid fibres which are used as bristle material correspond in their chemical and physical structure to the Kevlar, Type 49, from DuPont.

6. Brush sealing ring according to one or more of Claims 1 to 5, characterized in that it is configured for sealing predominantly gaseous fluids, including hydrogen.

7. Brush sealing ring according to one or more of Claims 1 to 6, characterized in that it is configured for use in turbo machines of all kinds as well as in electric generators.

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